

# Second Solar



\*Black frame product can be provided upon request.



Enhanced Product Warranty on Materials and Workmanship\*



Linear Power Performance Warranty\*

1<sup>st</sup> year power degradation no more than 2% Subsequent annual power degradation no more than 0.55%

\*According to the applicable Canadian Solar Limited Warranty Statement.

# **MANAGEMENT SYSTEM CERTIFICATES\***

ISO 9001 : 2015 / Quality management system ISO 14001 : 2015 / Standards for environmental management system ISO 45001 : 2018 / International standards for occupational health & safety IEC62941 : 2019 / Photovoltaic module manufacturing quality system

# **PRODUCT CERTIFICATES\***

IEC 61215 / IEC 61730 / CE / UL 61730 / IEC 63126 Level1 / Take-e-way



\* The specific certificates applicable to different module types and markets will vary, and therefore not all of the certifications listed herein will simultaneously apply to the products you order or use. Please contact your local Canadian Solar sales representative to confirm the specific certificates available for your Product and applicable in the regions in which the products will be used.

**CSI Solar Co., Ltd.** is committed to providing high quality solar photovoltaic modules, solar energy and battery storage solutions to customers. The company was recognized as the No. 1 module supplier for quality and performance/price ratio in the IHS Module Customer Insight Survey. Over the past 22 years, it has successfully delivered over 88 GW of premium-quality solar modules across the world.

\* For detailed information, please refer to the Installation Manual.



Module power up to 465 W

Lower LCOE & system cost

Module efficiency up to 21.5 %

Comprehensive LID / LeTID mitigation technology, up to 50% lower degradation

# **MORE POWER**



Better shading tolerance

# **MORE RELIABLE**



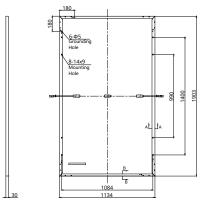
Heavy snow load up to 5400 Pa,

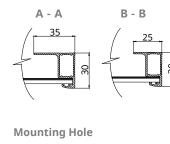
Minimizes micro-crack impacts

wind load up to 2400 Pa\*

#### **ENGINEERING DRAWING (mm)**



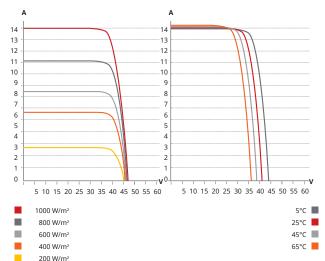




**Frame Cross Section** 



#### CS6L-460MS / I-V CURVES



## **ELECTRICAL DATA | STC\***

| CS6L  | 445MS                 | 450MS                  | 455MS                 | 460MS                 | 465MS      |
|---|-----------------------|------------------------|-----------------------|-----------------------|------------|
| Nominal Max. Power (Pmax)   | 445 W                 | 450 W                  | 455 W                 | 460 W                 | 465 W      |
| Opt. Operating Voltage (Vmp)  | 34.2 V                | 34.4 V                 | 34.6 V                | 34.8 V                | 35.0 V     |
| Opt. Operating Current (Imp)  | 13.03 A               | 13.10 A                | 13.17 A               | 13.24 A               | 13.30 A    |
| Open Circuit Voltage (Voc)  | 40.8 V                | 41.0 V                 | 41.2 V                | 41.4 V                | 41.6 V     |
| Short Circuit Current (Isc)   | 13.86 A               | 13.9 A                 | 13.95 A               | 14.00 A               | 14.09 A    |
| Module Efficiency   | 20.6%                 | 20.9%                  | 21.1%                 | 21.3%                 | 21.5%      |
| Operating Temperature   | -40°C ~ -             | +85°C                  |                       |                       |            |
| Max. System Voltage   | 1500V (I              | EC/UL) or              | · 1000V ()            | (EC/UL)               |            |
| Module Fire Performance   | TYPE 1 (0<br>61730 10 | UL 61730<br>200V) or ( | 1500V) c<br>CLASS C ( | or TYPE 2<br>IEC 6173 | (UL<br>60) |
| Max. Series Fuse Rating   | 25 A                  |                        |                       |                       |            |
| Application Classification  | Class A               |                        |                       |                       |            |
| Power Tolerance   | 0~+10                 | W                      |                       |                       |            |
| * Under Standard Test Conditions (STC) of irradiance of 1000 W/m <sup>2</sup> spectrum AM 1.5 and cell tempe- |                       |                        |                       |                       |            |

\* Under Standard Test Conditions (STC) of irradiance of 1000 W/m<sup>2</sup>, spectrum AM 1.5 and cell temperature of 25°C.

## **ELECTRICAL DATA | NMOT\***

| CS6L                         | 445MS   | 450MS   | 455MS   | 460MS   | 465MS   |
|------------------------------|---------|---------|---------|---------|---------|
| Nominal Max. Power (Pmax)    | 334 W   | 338 W   | 341 W   | 345 W   | 349 W   |
| Opt. Operating Voltage (Vmp) | 32.1 V  | 32.2 V  | 32.4 V  | 32.6 V  | 32.8 V  |
| Opt. Operating Current (Imp) | 10.41 A | 10.47 A | 10.52 A | 10.58 A | 10.63 A |
| Open Circuit Voltage (Voc)   | 38.6 V  | 38.8 V  | 38.9 V  | 39.1 V  | 39.3 V  |
| Short Circuit Current (Isc)  | 11.18 A | 11.21 A | 11.25 A | 11.29 A | 11.36 A |

 $\star$  Under Nominal Module Operating Temperature (NMOT), irradiance of 800 W/m² spectrum AM 1.5, ambient temperature 20°C, wind speed 1 m/s.

# **MECHANICAL DATA**

| Specification                         | Data  |
|---------------------------------------|---|
| Cell Type                             | Mono-crystalline  |
| Cell Arrangement                      | 120 [2 X (10 X 6) ]   |
| Dimensions                            | 1903 × 1134 × 30 mm   |
|                                       | (74.9 × 44.6 × 1.18 in)   |
| Weight                                | 24.2 kg (53.4 lbs)  |
| Front Cover                           | 3.2 mm tempered glass with anti-ref-<br>lective coating                                   |
| Frame                                 | Anodized aluminium alloy  |
| J-Box                                 | IP68, 3 bypass diodes   |
| Cable                                 | 4 mm² (IEC), 12 AWG (UL)  |
| Connector                             | T6 or MC4 or MC4-EVO2 or MC4-<br>EVO2A  |
| Cable Length<br>(Including Connector) | Portrait: 350 mm (13.8 in) (+) / 250<br>mm (9.8 in) (-); landscape: 1100 mm<br>(43.3 in)* |
| Per Pallet                            | 35 pieces   |

Per Container (40' HQ) 840 pieces

\* For detailed information, please contact your local Canadian Solar sales and technical representatives.

## **TEMPERATURE CHARACTERISTICS**

| Specification                                 | Data         |  |  |  |
|---|--------------|--|--|--|
| Temperature Coefficient (Pmax)                | -0.34 % / °C |  |  |  |
| Temperature Coefficient (Voc)                 | -0.26 % / °C |  |  |  |
| Temperature Coefficient (Isc)                 | 0.05 % / °C  |  |  |  |
| Nominal Module Operating Temperature 41 ± 3°C |              |  |  |  |

#### **PARTNER SECTION**

\* The specifications and key features contained in this datasheet may deviate slightly from our actual products due to the on-going innovation and product enhancement. CSI Solar Co., Ltd. reserves the right to make necessary adjustment to the information described herein at any time without further notice.

Please be kindly advised that PV modules should be handled and installed by qualified people who have professional skills and please carefully read the safety and installation instructions before using our PV modules.

CSI Solar Co., Ltd.

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